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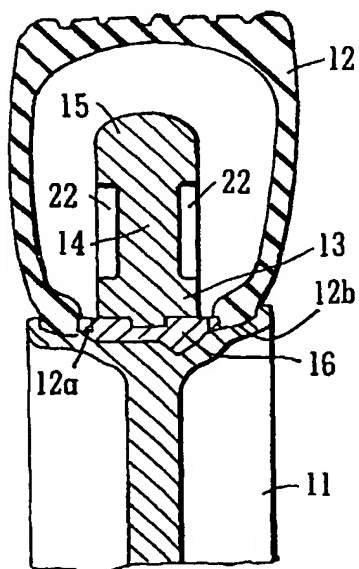
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(54) Title: **RUN-FLAT DEVICE**



(57) Abstract: A run-flat device (13) for fitting on the outer circumference of a wheel (11) inside an inflatable tyre (12). The device (13) comprising an annular ring (14) made up of a plurality (preferably three) of arcuate segments (15) interconnected at each end by clamping means (23, 23a, 23b, 28, 29, 35) equally spaced around the ring that imparts to each segment (15) a circumferential clamping force and an axial clamping force to urge the segments circumferentially and axially towards each other.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 B60C17/04 B60C15/028		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 B60C		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the International search (name of data base and, where practical, search terms used) EPO-Internal, PAJ, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 11476 A (SAVAGE JOHN) 11 March 1999 (1999-03-11) page 7, line 11-14 page 7, line 26-30 figures 1-3	1,2,9,10 3-8,11
Y	US 4 393 911 A (WINFIELD MASON C) 19 July 1983 (1983-07-19) column 4, line 59-64 figure 2	3-5
Y	GB 2 015 439 A (DUNLOP LTD) 12 September 1979 (1979-09-12) page 2, line 83-87 - line 98-104 figure 1	6-8
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.		
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax (+31-70) 340-3016	Authorized officer Bibollet-Ruche, D	

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GB 849 675 A (ALWEG FORSCHUNG G M B H) 28 September 1960 (1960-09-28) page 2, line 52-74 -----	11

INTERNATIONAL SEARCH REPORT

 Internati Application No
 PCT/GB 03/02580

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9911476	A	11-03-1999	WO 9911476 A1	11-03-1999
US 4393911	A	19-07-1983	CA 1193950 A1	24-09-1985
			DE 3374769 D1	14-01-1988
			EP 0100013 A2	08-02-1984
			JP 1693455 C	17-09-1992
			JP 3056201 B	27-08-1991
			JP 59089207 A	23-05-1984
			US RE32693 E	14-06-1988
GB 2015439	A	12-09-1979	AU 4454779 A	30-08-1979
			CA 1101321 A1	19-05-1981
			DE 2906714 A1	30-08-1979
			FI 790585 A	25-08-1979
			FR 2418104 A1	21-09-1979
			IT 1162715 B	01-04-1987
			JP 54122502 A	22-09-1979
			LU 80936 A1	18-06-1979
			SE 7901513 A	25-08-1979
			ZA 7900808 A	26-03-1980
GB 849675	A	28-09-1960	DE 1026647 B	20-03-1958
			BE 556144 A	
			FR 1173242 A	23-02-1959
			US 3049162 A	14-08-1962